Model#: IN-DI4MHEM

H.264 4-Megapixel IP D/N Hemispheric Camera with ExDR

Hardware User Manual

(DC 12V / PoE) **Ver. 2012/4/12**

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0. Precautions

Read these instructions

You should read all the safety and operating instructions before using this product.

Heed all warnings

You must adhere to all the warnings on the product and in the instruction manual. Failure to follow the safety instruction given may directly endanger people, cause damage to the system or to other equipment.

Servicing

Do not attempt to service this video device yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Trademarks

All names used in this manual are probably registered trademarks of respective companies.

Liability

Every reasonable care has been taken during the writing of this manual. Please inform your local office if you find any inaccuracies or omissions. We cannot be held responsible for any typographical or technical errors and reserve the right to make changes to the product and manuals without prior notice.

FCC/CE Regulation

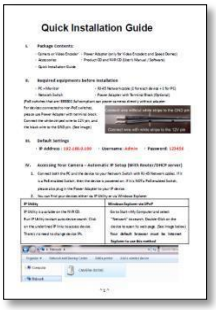
NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the users will be required to correct the interference at their own expense.

1. Introduction

Package Contents

H.264 4-Megapixel IP D/N Hemispheric Camera with ExDR

QIG



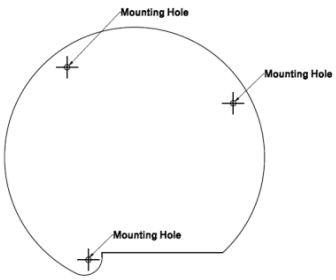
Product CD

Terminal Blocks for Power, DI/O

Audio

Accessories

Drill Template



Drill Template (scale 1:1)

Features and Benefits

This is a cutting edge network video surveillance camera. It can capture, compress and transmit real time video in excellent quality. This camera is your best choice to build an intelligent IP surveillance system.

Adaptive Profile

With the innovative embedded Image Signal Processor (ISP), this camera responds to changing lighting condition with customized algorithm. This allows for clear image with very little noise at night.

H.264/MPEG-4/MJPEG Triple Codec Dual Streaming

This device supports 3 compression formats, H.264, MPEG-4 and MJPEG. It brings superior image quality at 6 frames per second up to resolution of 2032 x 1920 pixels, and offers up to 12 frames per second in Full HD 1080p (1920 x 1080). In 720p (1280 x 720) and VGA resolution (640 x 480) the device reaches 12 frames per second.

ExDR (Extreme Dynamic Range)

Extreme Dynamic Range technology is the most advanced approach of improving the dynamic range of the camera. While many other WDR technologies enhance the dynamic range while producing noise, blur edges of objects and untrue colors, ExDR is designed to improve the dynamic range while keeping the true colors, sharp edges of objects and free from noise

Powerful Bundled Surveillance Software

To extend the capabilities of the IP Hemispheric Camera series, a powerful surveillance program is included in the package for free. Users can easily use an existing PC as a digital video recorder. Scheduled recording and manual recording keep every important video recorded in the local hard disk. Reliable and accurate motion detection with instant warning enables immediate response in every condition. Quick and simple search and playback function lets you easily find the images and video you want.

Software Development Kit Support

This IP Hemispheric Camera can be integrated or controlled by applications from third party software developers. Software developers can save considerable efforts by using our Streaming Library or ActiveX control.

Safety Instructions

Don’t use the power supply with other voltages

This device is likely to be damaged or damage other equipments / personnel, if you use a power supply with different voltage than the one included with this device. All warranty of this product will be voided in the situations above.

Don’t open the housing of the product

Cleaning

Disconnect this video product from the power supply before cleaning.

Attachments

Do not use attachments not recommended by the video product manufacturer as they may cause hazards.

Water and Moisture

Do not use this video product near water, for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool and the like.

Don’t use accessories not recommended by the manufacturer

Only install this device and the power supply in a dry place protected from weather

Servicing

Do not attempt to service this video product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Damage Requiring service

Disconnect this video product from the power supply immediately and refer servicing to qualified service personnel under the following conditions.

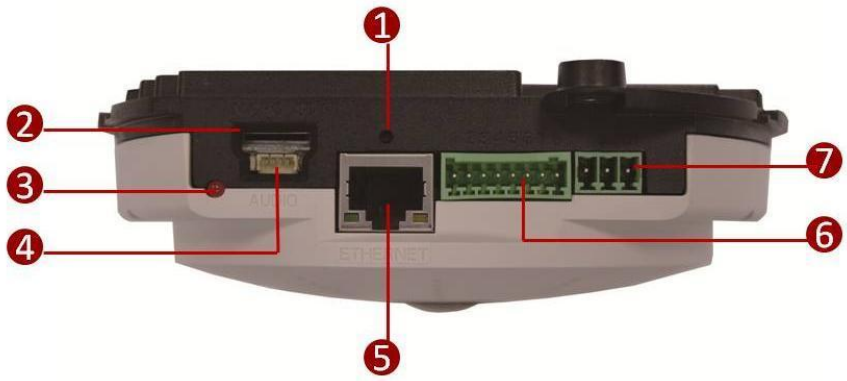
1) When the power-supply cord or plug is damaged
2) If liquid has been spilled, or objects have fallen into the video product.
3) If the video product has been directly exposed to rain or water.
4) If the video product does not operate normally by following the operating Instructions in

this manual. Adjust only those controls that are covered by the instruction manual, as an improper adjustment of other controls may result in damage, and will often require extensive work by a qualified technician to restore the video product to its normal operation.

Safety Check

Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks to determine if the video product is in proper operating condition.

Physical description



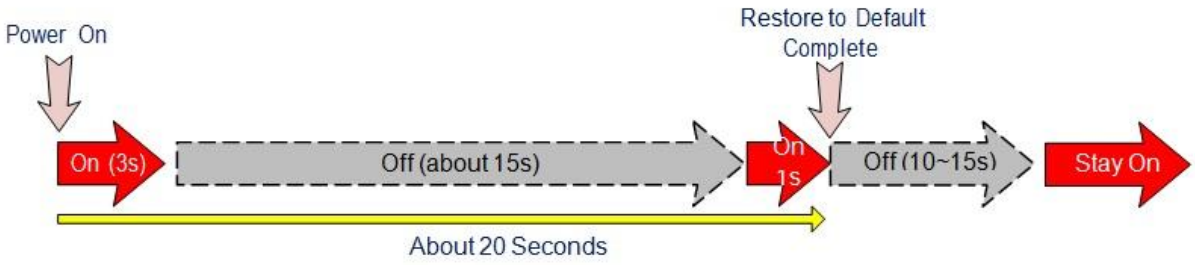
1. Reset Button
2. Micro SD / Micro SDHC Card Slot
3. Power LED
4. Audio Input / Output
5. Ethernet Port
6. Digital Input / Output
7. DC 12v Power Input

1) Reset Button

Step 1: Switch off IP device by disconnecting the power cable

Step 2: Press and continue to hold the Reset Button (with a sharp tipped object, like a pen.)

Step 3: ***Reconnect the power cable while continuing to hold the reset button.*** The red Power LED light will flash on for 3 second first, turn off for about 15 seconds, flash on for another second and turn off again. By this time the reset to default operation is already completed. ***This will take around 20 seconds from power up.*** You may then release the reset button. This length of time fluctuates slightly with the environment. The Power LED light will come back on and stay on after a few more seconds. The unit will start up with factory default settings automatically.



2) Micro SD / Micro SDHC Card Slot*

Insert your Micro SD card here for local recording on camera

3) Power LED

This LED light will indicate current camera status.

4) Audio Input / Output

The IP device supports audio input and output via terminal block

5) Ethernet Port

The IP device connects to the Ethernet via a standard RJ45 connector. Supporting NWAY, this IP device can auto detect the speed of local network segment (10Base-T/100Base-TX Ethernet).

6) Digital Input / Output

Used in applications like motion detection, event triggering, time lapse recording, alarm notifications, etc., the I/O terminal connector provides the interface to:

•**2 transistor output** - For connecting external devices such as relays and LEDs. Connected devices can be activated by Output buttons on the Live View page or through video management software. Connect Pin 2 with 4 or 6 with 8.

•**2 Digital Input** - An alarm input for connecting devices that can toggle between an open and closed circuit, for example: PIRs, door/window contacts, glass break detectors, etc. The device will detect the change in digital input and transmit the signal to video surveillance servers.

Pin 1	GND	Ground. Connect with Pin 3 for DI control loop.	
Pin 2	12V	Provides power to external devices with a maximum current of 100mA.	Voltage: 12V DC, Max: 1.2W

Pin 3	Digital Input	Connect to GND to activate, or leave floating (or unconnected) to deactivate.	Must not be exposed to voltages greater than 30V DC.
Pin 4	Transistor Output	Connect to Pin 2 through external devices for DO loop. If used with an external relay, a diode must be connected in parallel with the load for protection against transient voltages.	Max load = <100mA Max voltage = 24V DC (to the transistor)

(Pin 5 – 8 repeats Pin 1-4 for another set of DIO)

Connect input/output devices to the camera as follows:

1. Attach the cables for the device securely to the supplied green connector block.
2. Once cables are connected, push connector block into the terminal connector on camera.

7) DC 12V Power Input

Connect DC power source to the terminal block. The wire with white dashed lines is the live wire, which should connect to the 12V pin.

PIN	NAME	DESCRIPTION
1	N	AC Power Input
2	L	
3	GND	E-Ground of power

Product Specification

• Device	
Device Type	Hemispheric Camera
Image Sensor	Progressive Scan CMOS
Sensor Size	1/2.5 " (5.7 x 4.28 mm)
Day / Night	Yes
Minimum Illumination	Color: 1.63 lux at F2.8 (30 IRE, 2400°K); B/W: 0.06 lux at F2.8 (30 IRE, 2400°K)
Color to B/W switch	ISP based switch, configurable
Mechanical IR Cut Filter	Yes
IR Sensitivity Range	700 - 1100 nm
IR LED	No
Electronic Shutter	1 /15 - 1/2000 sec (auto mode)
• Lens	
Focal Length	Fisheye Lens, 1.05 mm / F2.8
Iris	Fixed iris
Focus	Fixed Focus
Horizontal Viewing Angle	180°
• Video	
Compression	H.264, MPEG-4 SP, MJPEG
Maximum Frame Rate vs. Resolution	6 fps at 2032 X 1920; 12 fps at 1920 X 1080; 12 fps at 1280 X 720; 12 fps at 640 X 480
Mode	180° / 360° Panorama, ePTZ, 6 VGA, Motion Detection Preset
Multi-Streaming	Simultaneous dual steams based on two configurations in single view mode; Multiple streams based on single configuration in 6 cropped VGA mode
Bit Rate	28 Kbps - 6 Mbps (per stream)
Bit Rate Mode	Constant, Variable
Image Enhancement	ExDR (Extreme Dynamic Range), White balance: automatic, hold and manual; Brightness; Saturation; Contrast; Edge enhancement; Automatic gain control; 2D+3D Digital noise reduction; Flickerless; Defogging
Privacy Mask	4 configurable regions
Text Overlay	User defined text on video

• Audio	
Compression	8 kHz, Mono, PCM, 16 bit encoding
Audio-In	Cable with 3.5mm Phone Jack
Audio-Out	Cable with 3.5mm Phone Jack
• Network	
Protocol & Service	TCP, UDP, HTTP, HTTPS, DHCP, PPPoE, RTP, RTSP, IPv6, DNS, DDNS, NTP, ICMP, ARP, IGMP, SMTP, FTP, UPnP, SNMP
Ethernet Port	1, Ethernet (10/100 Base-T), RJ-45 connector
Security	IP address filtering; HTTPS encryption; Password protected user levels; IEEE 802.1X network access control
• Alarm	
Alarm Trigger	Video motion detection (3-6 regions, depending on video mode); External device through digital input
Alarm Response	Notify control center; Go to ePTZ preset point or preset tour; Change camera settings; Command other devices; E-mail notification with snapshots; Save video or snapshot to local storage; Upload video, snapshot to FTP server; Activate external device through digital output

• Interface	
Digital Input	2, terminal block
Digital Output	2, terminal block
Local Storage	MicroSD/MicroSDHC memory card slot (card not included)
• General	
Power Source / Consumption	PoE Class 3 (IEEE 802.3af) / 9.6W DC 12V / 7.68W
Weight	425 g (0.93 lb)
Dimensions (Ø x H)	150mm x 45.32mm (5.9" x 1.8")
Mount Type	Flush, Wall, Pendant, Pole, Corner
Operating Temperature	-10 °C - 50°C (14°F - 122°F)
Operating Humidity	10% ~ 85% RH
Approvals	CE, FCC
• Integration	
ISV Integration	Software Development Kit (SDK) available
Firmware Access Browser	Microsoft Internet Explorer 6.0 or newer

2. Accessing Camera

If you have DHCP server / router in your network:

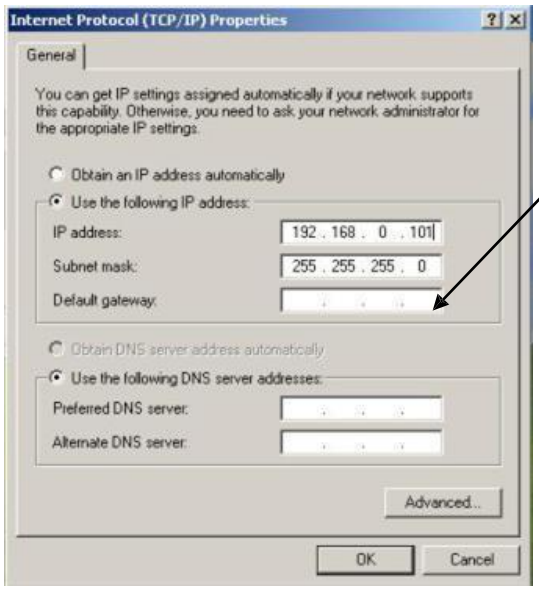
Many network server / routers are able to automatically provide IP addresses through DHCP. If you are using such a network, just plug in your computer and IP Hemispheric Cam into the network and your IP device will acquire network address by itself. Find and access the device with our IP Utility program.

If you do NOT have DHCP server / router in your network:

1. Configure your PC to use the same subnet by changing your PC's IP address to the subnet with prefix 192.168.0.XXX. The last number should be anything from 1 to 254 except 100 and other occupied IP addresses. Subnet mask should be 255.555.255.0.

2. **The default IP used by this device is 192.168.0.100. Please make sure your PC is *NOT* using this address and that no two equipments use the same IP address in the network.**

3. Change your IP address by going to Control Panel ->Manage Network Connections -> Right click on the connection to change -> Option -> TCP/IP IPv4 Properties.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 0 . 101
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

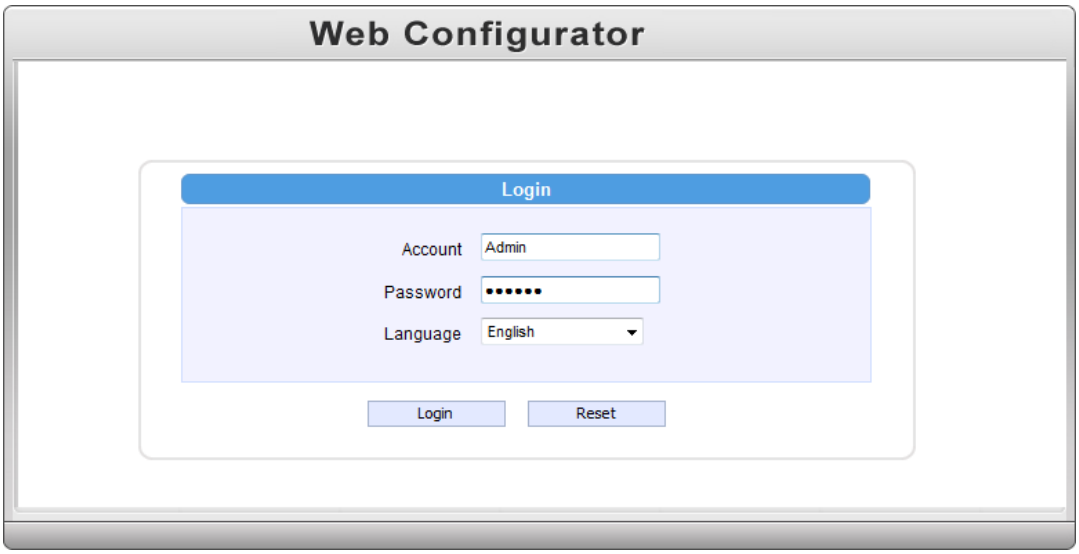
Please set the settings as below.

- IP address: 192.168. 0.xxx
- Subnet mask: 255.255.255.0

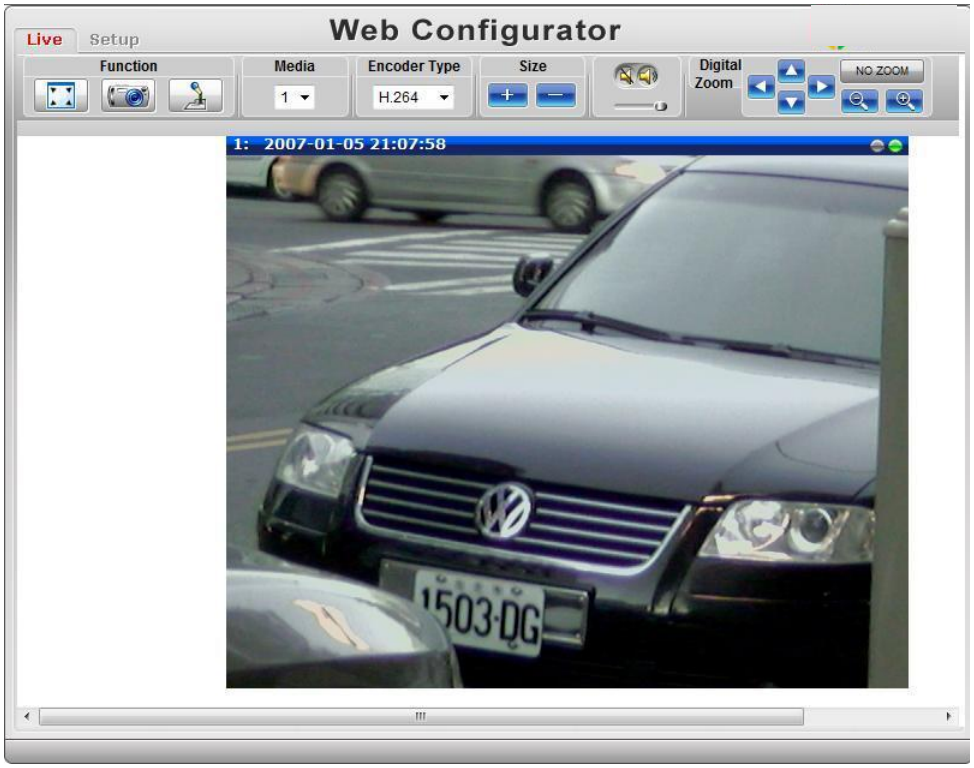
(**NOTE**: xxx should be a number from 1 to 254 except 100, which is used by the IP device. Please also make sure that no two equipments use the same IP address in the same network..)

4. Open Internet Explorer (Version 6.0 or above) , and type in the Default IP:
   192.168.0.100

5. When you see the login window, please input default user and password:
   Default User: admin Password: 123456



6. After logging in, you will see the video from camera. To go to the main menu, click the ”Setup” button on the top left.



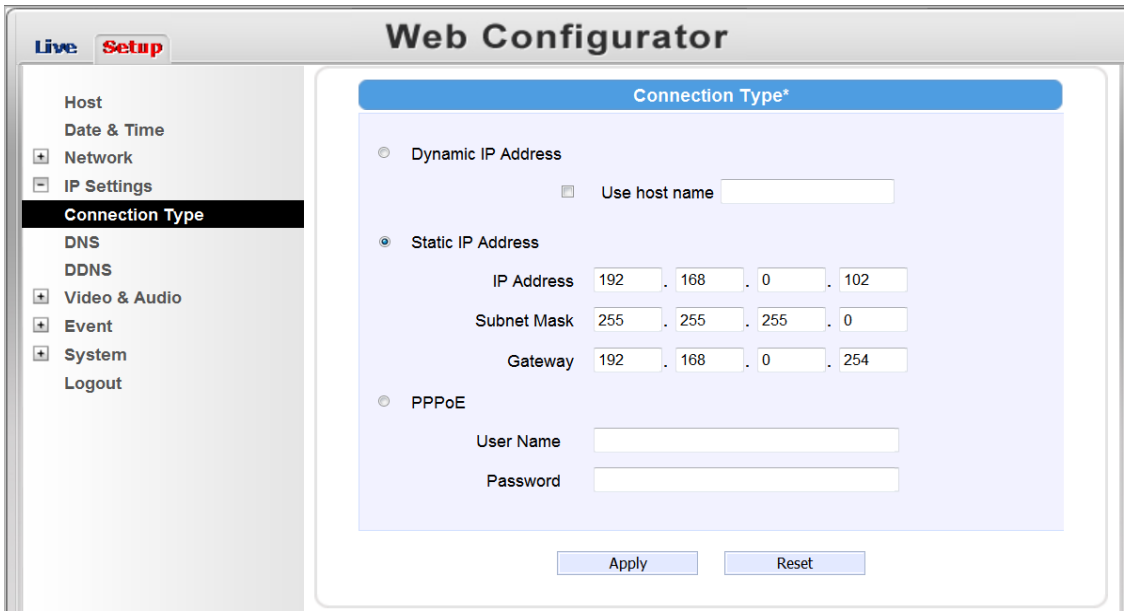
If you are using a single camera, this is enough to access the device.

If you are using multiple devices, you need to change the current device to another unused IP address, so that when the next device is connected to the network, no two devices use the same IP. Please perform the following steps.

7. Go to IP Settings -> Connection Type

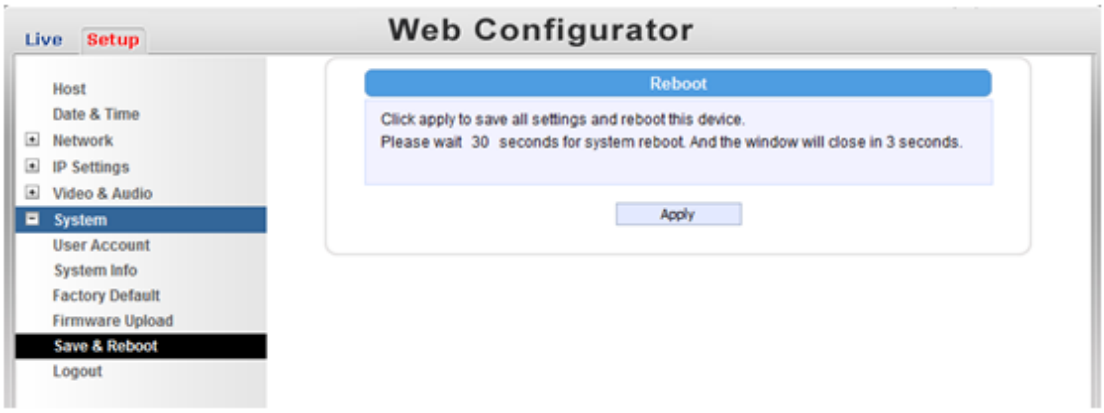
8. Change the IP mode to Static.

9. Change the IP to 192.168.0.102 or any other unused IPs. Do NOT use the PC's IP address or 192.168.0.100. If this is not the first device you add to the network, please also avoid other devices' IPs.



10. Click "Apply"

11. Please go to System -> Save & Reboot, and click "Apply". Internet Explorer will close after a few seconds. This is normal.



12. Wait for 30 seconds, and open IE again to connect to the **new IP**. (In this example, 192.168.0.102). For the second device or more you add into the network, please type the correct IP.

13. Adjust the default Video setting by going to Video & Audio -> Compression